

Search History  
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STN  
(HCAPLUS INSPEC JAPIO, USPATFULL)  
6/19/2006

(FILE 'HOME' ENTERED AT 01:48:41 ON 19 JUN 2006)

FILE 'STNGUIDE' ENTERED AT 01:48:44 ON 19 JUN 2006

FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2' ENTERED AT 01:49:12 ON 19 JUN 2006

L1 116168 S (LASER(8A)IRRADIAT?)  
L2 3019 S (CONTROL? OR ALTER? OR VARY? OR MANIPULAT?) (8A) (BEAM# (6A) SPEE  
L3 31222 S (PHASE) (10A) (FLUCTUAT? OR ENERG? (6A) FLUCTUAT?)  
L4 384576 S (LASER(W) BEAM#)

=> s 11 and 12 and 13 and 13

L5 5 L1 AND L2 AND L3 AND L3

=> s 11 and 12 and 13

L6 5 L1 AND L2 AND L3

=> d 16 1-5 abs, bib

L6 ANSWER 1 OF 5 USPATFULL on STN

AB It is an object to provide a **laser** apparatus, a **laser irradiating** method and a manufacturing method of a semiconductor device that can perform uniform a process with a laser beam to an object uniformly. The present invention provides a laser apparatus comprising an optical system for sampling a part of a laser beam emitted from an oscillator, a sensor for generating an electric signal including fluctuation in energy of the laser beam as a data from the part of the laser beam, a means for performing signal processing to the electrical signal to grasp a state of the fluctuation in energy of the **laser beam**, and **controlling** a relative **speed** of an **beam** spot of the **laser beam** to an object in order to change in **phase** with the **fluctuation** in **energy** of the laser beam.

AN 2004:260750 USPATFULL

TI **Laser** apparatus, **laser irradiation** method, and manufacturing method of semiconductor device

IN Miyairi, Hidekazu, Tochigi, JAPAN  
Shimomura, Akihisa, Kanagawa, JAPAN  
Takano, Tamae, Kanagawa, JAPAN  
Koyama, Masaki, Kanagawa, JAPAN

PA Semiconductor Energy Laboratory Co., Ltd, Atsugi-shi, JAPAN (non-U.S. corporation)

PI US 2004203248 A1 20041014

AI US 2003-663671 A1 20030917 (10)

PRAI JP 2002-269655 20020917

DT Utility

FS APPLICATION

LREP NIXON PEABODY, LLP, 401 9TH STREET, NW, SUITE 900, WASHINGTON, DC, 20004-2128

CLMN Number of Claims: 10

ECL Exemplary Claim: 1

DRWN 13 Drawing Page(s)

LN.CNT 665

L6 ANSWER 2 OF 5 USPATFULL on STN

AB It is an object to provide a **laser** apparatus, a **laser irradiating** method and a manufacturing method of a semiconductor device that make laser energy more stable. To attain the object, a part of laser beam emitted from an oscillator is sampled to generate an electric signal that contains as data energy fluctuation of a laser beam. The electric signal is subjected to signal processing to calculate the frequency, amplitude, and **phase** of the **energy fluctuation** of the laser beam. The transmittance of a light amount adjusting means is controlled in order that the transmittance changes in antiphase to the **phase** of the **energy fluctuation** of the laser beam and with an amplitude capable of

reducing the amplitude of laser beam emitted from the oscillator, the control being made based on the phase difference between the phase of a signal that is in synchronization with oscillation of laser beam emitted from the oscillator and the phase calculated, on the energy ratio of the sampled laser beam to laser beam emitted from the oscillator, and on the frequency and amplitude calculated. In the light amount adjusting means, energy of the laser beam oscillated from the oscillator energy is adjusted.

AN 2004:69054 USPATFULL  
TI **Laser** apparatus, **laser irradiation** method,  
and manufacturing method of semiconductor device  
IN Miyairi, Hidekazu, Tochigi, JAPAN  
Shimomura, Akihisa, Atsugi, JAPAN  
Takano, Tamae, Atsugi, JAPAN  
Koyama, Masaki, Atsugi, JAPAN  
Tanaka, Koichiro, Atsugi, JAPAN  
PA Semiconductor Energy Laboratory Co., Ltd., Kanagawa-ken, JAPAN (non-U.S.  
corporation)  
PI US 2004052279 A1 20040318  
~~AI US 2003-658472 A1 20030910 (10)~~  
PRAI JP 2002-268222 20020913  
JP 2002-274220 20020920  
DT Utility  
FS APPLICATION  
LREP NIXON PEABODY, LLP, 401 9TH STREET, NW, SUITE 900, WASHINGTON, DC,  
20004-2128  
CLMN Number of Claims: 16  
ECL Exemplary Claim: 1  
DRWN 14 Drawing Page(s)  
LN.CNT 977

L6 ANSWER 3 OF 5 USPATFULL on STN  
AB A method of manufacturing a grating in an optical waveguide that includes a core and a cladding covering the core. The method includes the steps of providing the optical waveguide and scanning a laser beam along an optical axis of the optical waveguide to form modulation of refractive index of radiation in the core. The core is made of a material having the refractive index that is changeable by irradiation of radiation. In addition, on the step of scanning, in the core, the **irradiation** range of the **laser** beam is controlled and the laser beam is scanned a plurality of times. Therefore, predetermined distribution of irradiation amount is obtained in a direction of the optical axis of the grating.

AN 2002:156477 USPATFULL  
TI Method of manufacturing grating  
IN Matsumoto, Sadayuki, Tokyo, JAPAN  
Ohira, Takuya, Tokyo, JAPAN  
Takabayashi, Masakazu, Tokyo, JAPAN  
Yoshiara, Kiichi, Tokyo, JAPAN  
Matsuno, Shigeru, Tokyo, JAPAN  
Takeya, Hajime, Tokyo, JAPAN  
Hoshizaki, Junichiro, Tokyo, JAPAN  
PI US 2002081068 A1 20020627  
US 6690860 B2 20040210  
AI US 2001-891319 A1 20010627 (9)  
PRAI JP 2000-394579 20001226  
DT Utility  
FS APPLICATION  
LREP LEYDIG VOIT & MAYER, LTD, 700 THIRTEENTH ST. NW, SUITE 300, WASHINGTON,  
DC, 20005-3960  
CLMN Number of Claims: 13  
ECL Exemplary Claim: 1  
DRWN 14 Drawing Page(s)  
LN.CNT 1550

L6 ANSWER 4 OF 5 USPATFULL on STN  
AB A method for measuring the speed of movement during beam track movement

in an optical memory apparatus which moves a beam spot on a rotating optical recording medium, a beam spot is received from the optical recording medium and it is detected when the beam spot crosses a track. The number of the detected track crossings of the beam spot during a predetermined time are detected, and the interval of the detected track crossings is measured. The remainder time from the time when a track crossing is detected to the end of the predetermined time is counted, and the amount of movement of the beam spot in the predetermined time from the number of tracks counted, the time of the track crossing interval detected, and the remainder time detected, is measured.

AN 93:57558 USPATFULL  
TI Method and apparatus for measuring speed of movement during beam track movement in optical memory apparatus  
IN Yanagi, Shigenori, Kawasaki, Japan  
PA Fujitsu Limited, Kawasaki, Japan (non-U.S. corporation)  
PI US 5228019 19930713  
AI US 1990-506908 19900410 (7)  
PRAI JP 1989-90024 19890410  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Psitos, Aristotelis; Assistant Examiner: Hindi, Nabil  
LREP Staas & Halsey  
CLMN Number of Claims: 8  
ECL Exemplary Claim: 1  
DRWN 11 Drawing Figure(s); 8 Drawing Page(s)  
LN.CNT 794

L6 ANSWER 5 OF 5 USPAT2 on STN  
AB A method of manufacturing a grating in an optical waveguide that includes a core and a cladding covering the core. The method includes scanning a laser beam along an optical axis of the optical waveguide to modulate the refractive index of the core. The core is made of a material having a refractive index that is changeable upon irradiation by radiation. In addition, in scanning the core, the **irradiation** range of the **laser** beam is controlled and the core is scanned several times. Therefore, a predetermined distribution of irradiation is obtained in a direction of the optical axis of the grating.

AN 2002:156477 USPAT2  
TI Method of manufacturing grating  
IN Matsumoto, Sadayuki, Tokyo, JAPAN  
Ohira, Takuya, Tokyo, JAPAN  
Takabayashi, Masakazu, Tokyo, JAPAN  
Yoshiara, Kiichi, Tokyo, JAPAN  
Matsuno, Shigeru, Tokyo, JAPAN  
Takeya, Hajime, Tokyo, JAPAN  
Hoshizaki, Junichiro, Tokyo, JAPAN  
PA Mitsubishi Denki Kabushiki Kaisha, Tokyo, JAPAN (non-U.S. corporation)  
PI US 6690860 B2 20040210  
AI US 2001-891319 20010627 (9)  
PRAI JP 2000-394579 20001226  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Ullah, Akm Enayet; Assistant Examiner: Stahl, Mike  
LREP Leydig, Voit & Mayer, Ltd.  
CLMN Number of Claims: 15  
ECL Exemplary Claim: 1  
DRWN 25 Drawing Figure(s); 14 Drawing Page(s)  
LN.CNT 1555

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